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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,611

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Hans-Gunter Benner

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EXAMINER

SHABMAN, MARK A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,611	Applicant(s) BENNER ET AL.	
	Examiner MARK SHABMAN	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato JP 11-237274 (English machine translation provided) hereinafter referred to as Kato in view of Totten US Patent 6,599,096 B1 hereinafter referred to as Totten.

Regarding **claim 1**, the apparatus of Kato as seen in figures 1 and 2 of the drawings discloses a filling level sensor for detecting a level of fuel in a tank. Kato does not explicitly disclose a tank with an installation opening through which the level sensor is inserted, however it is understood that the level sensor is for use in a tank such as that seen in Totten. Totten discloses the tank having an installation opening 16 allowing for installation of a sensor. It would have been obvious to one of ordinary skill in the art at the time of invention to have used such a tank with such an opening in conjunction with the apparatus of Kato to allow for easier installation and removal of the sensor if it was to fail or require maintenance. Kato further comprises a float 11 and a lever arm 10 which is coupled to the float and follows a fuel filling level. A "clip" 12 is present which is attached to the level arm 10. A support 1 can be seen to which the clip 12 is coupled, providing installation in the tank. The clip comprises a guide part 13 which protrudes

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laterally over the support as can be seen in figure 1, and includes a contour 13b having a guide curve on a side facing away from the support (also seen in figure 1). The lever arm in the apparatus of Kato pivots in response to the filling level of the tank to determine the fuel level within and would be capable of pivoting if the guide curve were to come in contact with the boundary of the installation opening during installation in the tank of Totten. Further, the courts have held that apparatus claims must be structurally distinguishable from the prior art in terms of structure, not function. See *In re Danley*, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. v. Bausch and Lomb, Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). The Courts have held that the manner of operating an apparatus does not differentiate an apparatus claim from the prior art, if the prior art apparatus teaches all of the structural limitations of the claim. See *Ex Parte Masham*, 2 USPQ2d 1647 (BPAI 1987). In the present case the installation step of the level sensor would dictate whether the lever arm would pivot when the guide curve contacts a boundary of the installation opening as claimed, and therefore as the structural limitations of Kato would allow for such an occurrence, it is capable of satisfying the limitation. The clip 12 of Kato is not explicitly disclosed as being constructed from plastic, however, it would have been obvious to one of ordinary skill in the art at the time of invention to have used plastic to construct the clip as plastic is non-corrosive and inexpensive and would help prevent any unwanted interaction between the detection objects nearby.

Regarding **claim 2**, the "guide curve" of Kato has a curved edge pointing away from the support as claimed.

Regarding **claim 3**, as seen in figure 1 of Kato, the "support" 1 has an edge with a smooth contour on a side facing away from the guide part of the lever arm.

Regarding **claim 4**, the guide part of Kato is attached to the lever arm as seen in figures 1 and 2. It would have been obvious to one of ordinary skill in the art at the time of invention to have attached the two pieces in any form possible, such as by a latching connection to ensure that they move together with respect to the fluid level.

Regarding **claim 5**, the guide part and lever arm of Kato are seen as integral parts within the apparatus which are not capable of functioning alone.

Regarding **claim 6**, Kato discloses a lever wire 10 which is coupled to the clip and secures the float in place as claimed.

Regarding **claim 7**, it would have been obvious to one of ordinary skill in the art at the time of invention to have manufactured the fuel tank to comprise an installation opening which is no larger than necessary for insertion of the level sensor or to have manufactured a level sensor based on the size of the installation opening in which it is to be inserted, to allow for the smallest possible sensor to be used, thereby maximizing the capacity of the tank itself.

Regarding **claim 8**, as can be seen in figure 2 of Totten, an installation flange 20 can be used to keep the level sensor from falling into the tank where it would be irretrievable. It would have been obvious to one of ordinary skill in the art at the time of invention to have used such a flange in the apparatus of Kato to prevent the same from happening.

Regarding **claim 10**, as no benefits or advantages are given as to the means for mounting the lever wire to the plastic clip, any method such as using a bearing hole to form a bearing spindle as claimed would be sufficient and equivalent to the mounting means of Kato.

Regarding **claim 11**, although the Kato reference does not explicitly disclose the guide part and the clip as being integral, the two are attached and it therefore would have been obvious to one of ordinary skill in the art at the time of invention to have formed them as an integral piece in order to prevent them from separating during use.

Regarding **claim 12**, the apparatus of Kato as seen in figures 1 and 2 of the drawings discloses a filling level sensor for detecting a level of fuel in a tank. Kato does not explicitly disclose a tank with an installation opening through which the level sensor is inserted, however it is understood that the level sensor is for use in a tank such as that seen in Totten. Totten discloses the tank having an installation opening 16 allowing for installation of a sensor. It would have been obvious to one of ordinary skill in the art at the time of invention to have used such a tank with such an opening in conjunction with the apparatus of Kato to allow for easier installation and removal of the sensor if it was to fail or require maintenance. Kato further comprises a float 11 and a lever arm 10 which is coupled to the float and follows a fuel filling level. A "clip" 12 is present which is attached to the lever arm 10. A support 1 can be seen to which the clip 12 is coupled, providing installation in the tank. The clip comprises a guide part 13 which protrudes laterally over the support as can be seen in figure 1, and includes a contour 13b having

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a guide curve on a side facing away from the support (also seen in figure 1). The lever arm in the apparatus of Kato pivots in response to the filling level of the tank to determine the fuel level within and would be capable of pivoting if the guide curve were to come in contact with the boundary of the installation opening during installation in the tank of Totten. Further, the courts have held that apparatus claims must be structurally distinguishable from the prior art in terms of structure, not function. See *In re Danley*, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. v. Bausch and Lomb, Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). The Courts have held that the manner of operating an apparatus does not differentiate an apparatus claim from the prior art, if the prior art apparatus teaches all of the structural limitations of the claim. See *Ex Parte Masham*, 2 USPQ2d 1647 (BPAI 1987). In the present case the installation step of the level sensor would dictate whether the lever arm would pivot when the guide curve contacts a boundary of the installation opening and as the support slides along another portion of the opening as claimed, and therefore as the structural limitations of Kato would allow for such an occurrence, it is capable of satisfying the limitation. The clip 12 of Kato is not explicitly disclosed as being constructed from plastic, however, it would have been obvious to one of ordinary skill in the art at the time of invention to have used plastic to construct the clip as plastic is non-corrosive and inexpensive and would help prevent any unwanted interaction between the detection objects nearby.

Regarding **claim 13**, the Totten reference teaches an installation flange which prevents the float sensor structure from falling through the installation opening and into the tank when inserted as claimed.

Regarding **claim 14**, the guide curve in Kato is designed to pivot the clip during the installation of the support through the opening if the guide comes into contact with the side of the opening. Depending on the size of the opening, the guide may pivot until essentially flush with the side of the support as claimed. Further, one of ordinary skill in the art at the time of invention would be motivated to make the support of Kato wider to protect the components of the sensor during installation if the opening was near the same width as the elements.

Regarding **claim 15**, when the guide curve of Kato pivots as claimed, the float and lever arm would avoid obstruction in the fuel tank as claimed.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Totten as applied to claim 1 above and further in view of Grötschel US Patent 5,765,435 (hereinafter referred to as Grötschel).

Regarding **claim 9**, the apparatuses of Kato and Totten do not explicitly disclose a potentiometer configured for detecting the position of the float arm as claimed. It was well known in the art at the time of invention to use potentiometers as a means for sensing a change in position of a float arm level sensor. Grötschel teaches such an embodiment as seen in the figures and described in the summary. It would have been obvious to one of ordinary skill in the art at the time of invention to have used the potentiometer sensing means of Grötschel in combination with the float arm of Kato for the benefit of its consistent and precise output.

Response to Arguments

Applicant's arguments filed 27 April 2009 have been fully considered but they are not persuasive.

Applicant argues that the Totten and Kato references fail to disclose the lever arm configured to pivot with the plastic clip when the guide curve contacts a boundary of the installation opening as claimed. Page 8 of the remarks states that the resulting outcome of combining the Kato and Totten references is unpredictable as the combination of the references would not teach the invention as a whole. It is noted that the Totten reference is relied upon to teach the tank structure with the installation opening and the float sensor installed therethrough, however the structural limitations of the sensor itself are found within the Kato reference. Therefore, limitation of "wherein the lever arm is configured to pivot with the plastic clip in response to the fuel filling level when the guide curve contacts a boundary of the installation opening" as claimed is not explicitly taught in either reference, but rather is a result of the combination under 35 USC 103. Applicant further argues on page 9 that there is no teaching or suggestion that the perimeter edge of the detection object in Kato would overcome the coefficient of friction against the installation opening during contact. Examiner contends that although there is no teaching towards or away from this argument, the claim recites solely that the lever arm is "configured to pivot with the plastic clip when the guide curve contacts a boundary of the installation opening" which is in fact taught by the Kato reference. Figure 3 of Kato illustrates the movement of the guide piece 13 and thus movement of the lever arm in response. In the case where the guide curve contacts a boundary of

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the installation opening, depending on the direction of force applied, the lever arm would in fact rotate in response, thus deeming the sensor of Kato capable of and configured to pivot upon contact. One of ordinary skill in the art would be able to determine from the disclosure of Kato how contacting the guide curve would cause the float arm to pivot and thus how contact with the installation opening of Totten would cause it to pivot as well. Since the combination of Kato and Totten meets the structural limitations as claimed, and in combination, the resulting apparatus would be capable of pivoting with the plastic clip when contacting the boundary of the installation opening, Examiner fails to find the arguments persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK SHABMAN whose telephone number is (571)270-3263. The examiner can normally be reached on M-F 8:00am - 4:30pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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